



## NO DRAWINGS

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## COMPLETE SPECIFICATION

## Confectionery Composition

We, NESTLE'S PRODUCTS LIMITED, Nestle House, Collins Avenue, Nassau, Bahama Islands, a company incorporated in the Bahama Islands, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a method of making a confectionery composition which is especially suitable for the manufacture of so-called "white chocolate", i.e. a chocolate-like product containing cocoa butter, milk and sugar but no cocoa powder. White chocolate is usually presented in moulded bars or like forms.

The reaction, under the influence of heat, between sugar and lactic solids, to give a semi-solid product is well-known in confectionery manufacture. This reaction, known as "caramelisation", produces a stable product of relatively high molecular weight having a characteristic, pleasing taste and a golden-brown colour. This caramelised product is frequently employed as a major constituent of toffee, fudge and similar confectionery products. The viscosity, colour, taste and other properties of the caramelised product vary widely according to its composition and the reaction conditions employed.

It has now been found that a very satisfactory dry powdered caramelised product can be obtained from sugar and milk solids. To provide a "white chocolate" the product may be mixed with cocoa butter and the mixture may be ground, conched and moulded using conventional chocolate-making machinery.

According to the invention a method of preparing a confectionery product comprises heating a mixture of sugar and milk solids

in the presence of sufficient water to allow caramelisation, drying the resulting caramelised product, combining the dried product with cocoa butter and grinding the combined product to a homogeneous, mouldable paste.

Preferably the mixture of sugar and milk solids contains from 40 to 80% sugar and from 20 to 60% milk solids by weight. The amount of water used is preferably the minimum necessary for a satisfactory caramelisation, and it usually represents 8 to 15% of the weight of the sugar/milk solids mixture. Most of the water remaining after caramelisation is removed during drying. A homogeneous mixture of the sugar and milk solids may be easily prepared using standard mixing techniques and apparatus. The particle sizes of the sugar and milk solids may be, for example, in the range from 0.1 to 2 mm for the sugar, and from 0.1 to 1 mm for the milk solids.

Whole, skimmed or partially skimmed milk powder may be used as the source of milk solids, but whole milk powder is preferred, as it gives the product a higher nutritional value and a richer taste.

The sugar/milk solids mixture is preferably heated in the presence of water to a temperature in the range from 80 to 105°C in a jacketed vessel of conventional type, which may be heated. A preferred type of vessel is heated by passing steam at a temperature in the range from 130°C to 160°C through the jacket. The total caramelisation time may vary from 10 minutes to 60 minutes, depending on the rate of heat input and the exact characteristics desired in the product. During heating the mixture becomes a golden-brown colour and develops the characteristic flavour of caramel. When the reaction has progressed to the desired ex-

tent, the heating is discontinued and the product may be dried under reduced pressure, preferably in the range of from 100 to 150 mm of mercury. The drying is preferably carried out in the same vessel as the heating. The period of drying may vary from 10 to 60 minutes, preferably from 15 to 30 minutes, to provide a powdered product, golden-brown in colour and having a moisture content not exceeding 4% by weight.

The mixture preferably has a pH of 6.7—7.0. A 3.4% w/v solution in water which is advantageously controlled by means of a buffer compound, e.g. an alkali metal phosphate, added to the mixture before heating.

The dry powdered product has a particle size in the range from 0.1 to 2 mm and is easily handled by conventional equipment, e.g. by a conveyor belt.

In the manufacture of white chocolate as hereinbefore defined according to the invention, the caramelised product is mixed with cocoa butter and optionally other constituents such as aromas, for example in a conventional melangeur. The mixture may then be ground and conched in accordance with conventional chocolate manufacturing techniques. Fruit pieces and nuts may be added after conching and the final composition may be moulded, wrapped and packed in known manner.

The following Example in which all parts and percentages are by weight, is given by way of illustration only:—

#### EXAMPLE

40 parts of milk powder, 26 parts of fat are mixed in a Werner-Pfleiderer mixer with 60 parts of crystalline sugar and 0.8 parts of trisodium phosphate dodecahydrate dissolved in 10 parts water. The lid is closed and steam at a pressure of 4 kg/cm<sup>2</sup> at about 150°C is admitted to the jacket around the vessel. The temperature of the mixture is gradually raised to 95°C in 45 minutes. The steam supply is then disconnected and the pressure in the vessel is reduced to 100—150 mm Hg for a period of 30 minutes. A golden-brown dry caramelised powder is obtained at a temperature of 90°C, and has a moisture content of 1.8—2.5% and a pH of 6.7—6.9. 5.2 g in 150 ml distilled water.

40 parts of the dry products are mixed with 20 parts of deodorised cocoa butter and the mixture is ground to a particle size not exceeding 30 microns. The mixture is then conched in a longitudinal conch for 48 hours at a temperature not exceeding 55°C. The viscosity is adjusted during conching by adding 0.2 parts of lecithin and 2 parts of cocoa butter. After conching, 0.05 parts of vanillin

are added and the mixture is moulded in the usual manner to give bars or like articles. The product has a marked but pleasant caramel flavour and is golden-brown in colour.

#### WHAT WE CLAIM IS:—

1. A method of preparing a confectionery product which comprises heating a mixture of sugar and milk solids in the presence of sufficient water to allow caramelisation, drying the resulting caramelised product, combining the dried product with cocoa butter and grinding the combined product to a homogeneous, mouldable paste.

2. A method according to claim 1, in which said mixture is heated in the presence of from 8% to 15% of its weight of water.

3. A method according to claim 1 or 2, in which said mixture comprises from 40 to 60% by weight of sugar and from 20 to 60% by weight of milk solids.

4. A method according to any preceding claim in which the mixture is heated to a temperature from 80°C to 105°C for 10 to 60 minutes.

5. A method according to any preceding claim, in which the caramelised product is dried under reduced pressure.

6. A method according to claim 5, in which the caramelised product is dried under a pressure of from 100 to 150 mm of mercury for 15 to 30 minutes.

7. A method according to any preceding claim, in which during heating the pH of the mixture is maintained at 6.7 to 7.0 by addition of a buffer compound.

8. A method according to claim 7, in which the buffer compound is an alkali metal phosphate.

9. A method according to any preceding claim, in which the combined product is ground to a particle size not exceeding 30 microns.

10. A method according to any preceding claim in which said homogeneous paste is conched and moulded.

11. A method according to claim 1, substantially as hereinbefore described with reference to the Example.

12. A confectionery composition whenever prepared by a method according to any preceding claim.

13. A composition according to claim 12 containing fruit pieces.

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